THE EVENING WORLD'S RADIO PHONI SERVICE COLUMN

four palms; formerly Commander 167th Squadron, Royal Air Forces. CHARGING STORAGE BATTERIES

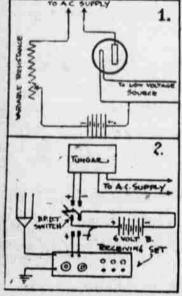
WITH A. C. PART 2.

The increased cost and additions complications of using the two-bulb set es not compensate for the difference results, and as the pulsating direct urrent is satisfactory in every way for battery charging, the simple half wave

ectifier is the more popular.

The gas filled "tungar" tube correponds to the ordinary two-e-except Figure 1. An adjustable resistance regulates the amount of charging cur-rent flowing through the battery. This is merely cited as an example, so as to give the underlying principles of opera-tion. While it is possible to charge a bettery using another battery to excite the filament of the lamp for recharging, there is no economy in exhausting one battery to help charge another. A five-ampere bulb takes approximately 18 amperes at two and one-half volts for filament lighting. Second, a re-sistance for regulating the charging current would be inefficient and waste-

the principle is carried out without waste or loss of energy by the use of a small auto-transformer. In the small popular 5-ampere one battery set this transformer has two secondary windings, one consisting of a few turns of heavy wire for furnishing the filament current and the other consisting of a great number of turns for supplying the battery charging current. The pringary has three adjustable taps, making the outfit adjustable to various line voltages. It takes considerably more current to start the bulb rectifying than it does to maintain the arc for small auto-transformer. In the small



the initial force necessary to move ar the initial force necessary to move an object is always greater than the energy required to keep it going. In the tungar bulb the current necessary to start rectification is so high that if left on for any length of time would result in burning out the tube. An arrangement is therefore provided to lower the potential as soon as the bulb commences rectifying.

When purchasing one of these sets it is well to bear in mind the size of

when purchasing one of these sets it is well to bear in mind the size of your battery—for a battery of the smaller type of not more than 46-ampere hours the 2-ampere tube will do the work. For any larger size battery the 5-ampere tube should be used, as it will observe the battery in a much morter period.

shorter period.

Another point that should be considered is the duty or "load." as it is called, that is put on the battery—the rate of discharge when operating the receiving set. If a single tube detector amplifier is used, the discharge rate will be approximately one ampere. If the receiver is in operation an average of three hours a day the total discharge will be three ampere hours. In this case the two ampere tungar lamp will be sufficiently large for recharging the be sufficiently large for recharging the battery regardless of its size. Operat-ing the rectifier for about two hours a day will keep the battery in prime con-dition.

However, if a three-tube receiving unit is used, the total discharge over the same period will be nine ampere hours. To keep the battery fully charged with a two-ampere rectifying lamp under this heavy load would necessitate recharging operations of at least five hours daily, whereas a five-ampere rectifier tube would do the work in about two hours.

A battery should never be permitted to run down completely before it is re-charged. Aside from the needless drain on the battery, it has two very distinct disadvantages from the operating disadvantages from the operating ginia Beach and Poyers H to become inoperative just in the middle S.A. M., 12 M. and 4 P. M. of some interesting programme, and, secondly, during the period of complete recharging the station is out of opera-

The advantages of putting back the energy consumed every day or so are

The tungar has been approved by the The tungar has been approved by the National Board of Fire Underwriters, and if hooked up in approved fashion it it perfectly sake to put the recharging unit in operation and so away with safety. If at any time the supply voltage should fail, and when coming on again is not sufficiently strong to start the tube rectifying, there is no need for worry, as it is impossible for the battery to discharge back through the rectifying tube.

tery to discharge back through the rectifying tube.

Figure 2 gives a convenient method
of connecting the rectifier with the
battery and insures the safety of the
receiving instruments by making it
impossible to charge the battery with
the receiver hooked in. Aside from the
fact that operation of the receiver
would be impossible with the rectifier
connected to it through the battery,
due to the puisating noises of the A. C.,
which would be evidenced in the receivers to the utter exclusion of everything clae, there is possibility of damage to both the receiver and rectifier.

If experimental work is contemplated
in which a direct connection between
the rectifier and the receiver is desired
it will be well to purchase one with an
insulated transformer — separate primary and secondary—instead of the
regularly used auto-transformer type.
The same projection may be had by
connecting in the line side of the outfit a "1 to 1" insulating transformer.
The care of the rectifier tube is identical with that of the radio tubes. In
experimental work connect a rheepalar
and an ammeter in the DC. C. circuit
and an ammeter in the DC. C. circuit

experimental work connect a rheostat and an ammeter in though C. circuit so as to prevent a currey, of more than

By Capt. Robt. Scofield Wood, five amperes from reaching the tube.

D. F. C., M. C., Creix de Guerre with largely upon the treatment accorded it, and under favorable conditions will everage 1.800 hours of actual duty.

> DIO COMPASS BEACONS. The fleets of the Standard Oil Cot

pany have been ordered to make neces ompass stations to obtain and verify their positions of the coast. The company has directed its skippers to make (ul) and frequent use of these stations. In the event of running within communicating distance of one of the forty-four radio stations main-tained for positioning purposes by the Navy Department and whether or no

Navy Department and whether or not the master of the unfortunate craft used the facilities at his command. These facts will be considered in de-termining his responsibility. Many marine concerns have made it a part of their regular ruling that if a vessel goes aground under any circum-stances and has not asked for a comwith neglect of duty and punished by School.

the authorities accordingly.

Reports filed in the Naval Communication Service office show that in January 11,450 compass bearings were furnished 5,198 ships; in February 9,792 bearings were radiced to 4,755 vessels, and in March positions were reported and in March positions were reported to 3.897 ships within an average time of 2.75 minutes, a total of 8,428 bearings being given. Of the last 7,124 bearings were furnished merchant ships and eight to aircraft, which is making use

NAVY TO STUDY STATIC. Plans for the study of the well know than it does to maintain the arc for static, so troublesome to the radio fan, the most economical operation. In this is connection with its possible relation respect it is like most everything else, to storm centres, has been announced by the Navy Department for the com-

TWENTY-SIX NEW BROADCASTING

STATIONS LICENSED. Between May 20 and 27 the following limited commercial stations were li-censed by the Radio Section of the Deartment of Commerce. WDZA, Arizona Daily Star, Tucson

WDAO, Automotive Electric Company, Dallas, Tex, WDAL, Florida Times Union, Jack WDAN, Glenwood Radio Corporation

WDAQ, Hartman-Riker Electric and fachine Company, Brownsville, Pa. WDAR, Lit Bros., Philadelphia, Pa. WDAP, Midwest Radio Central, Inc. Chicago, Ill.

KDZB, Frank E. Siefert, Bakers

WDAM, Western Electric Company New York, N. Y. WDAT, Delta Electric Company, Vorcester, Mass. WDAW, Georgia Railway and Powe Company, Atlanta, Ga.
WDAK, Hartford Courant, Hartford,

WDAU, Slocum & Kilburn, New Bedford, Mass. WDAS, Samuel A. Walte, Worcester. Mass. WDAX, First National Bank, Center-ville, Ia. WDAT, Kenneth M. Hance, Fargo,

N. D. KDZD, W. R. Mitchell, Los Angeles, WDAV, Muskogee Daily Phoenix, Muskogee, Okla. KDZE, The Rhodes Company, Seattle,

Wash. KDZF, Automobile Club of Southern California, Los Angeles, Cal. WEAC. Baines Electric Service Com-KDZG. Cyrus Peirce & Co., San Fran-

WEAA, Fallain & Lathrop, Flint, KDZH, Fresno Evening Herald, Fres-

no, Cal. WEAD. Northwest Kansas Radio

WEAD, Northwest Kansas Radio Supply Company, Atwood, Kan. WEAB, Standard Radio Equipment Company, Fort Dodge, la.

All Radio Compass stations, especially those along the Gulf coast, will co-operate with the Weather Bureau in taking radio compass bearings on all static disturbances three times daily, in an effort to determine whether or not there is any connection between not there is any connection between the centre of electrical disturbances and the centre of storms. If this is found to be the case, it is

said that storms originating off the Southeastern coast can be followed every foot of their progress up the Gulf or coast and forecasts sent in advance of them to the sections they will touch.

The new static schedule went into The new static schedule went into effect May 20 at Hampton Roads Air Station. Beports on the quantity, inten-sity and bearing of atmospheric static being received by telegraph from Naval compans stations at Hog Island, Vir-ginia Beach and Poyers Hill daily at

NEW NICARAGUAN STATIONS. The establishment of a commercia wireless station at Managua and atso atations at Bluefields, San Juan del Norte and Cabo Gracias de Dios in Nicaragum have been authorized by concessions granted to John B. Wilson. Managua, according to United States Consul Harold Playter. It is understood that these concessions given to Mr. Will son, who represents the Tropical Radio Telegraph Company (United Fruit Company), exclusive rights at the places

THE EVENING WORLD RADIO CLUB. Application for Membership.

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Call Letters Date

JONES RADIO SETS Employ the naitive Armstrong Circuit Jones Radio Laboratories Monroe St. Hreuklyn, S. 1 Telephone 1217-II Lafayetta

W J Z (Newark) 360 Metres.

Features for the day; Arlington official time at 12.55 to

Weather reports at 11 A. M.

Weather reports at 11 A st. 1 P. M.
6 P. M. 11.01 P. M.
7 P. M.— "Man in the Moon" stories.
7.30 P. M.— "A Vision of War,"
Eulogy by Robert Ingersoll, read by an editor of the Truth Seeker.
7.45 P. M.— "Gold Star Mothers," by Alice Durrell Stuck. 7.55 P. M .- "Broadcasting Broadway,

y Bertha Brainard. 8 P. M.-Memerial Day Address, b Capt. Warren P. Coon. former Chap ain of the 113th Infantey, 23th Division dyman. Musical programme of patri otic selections, including "My Ow United States," by G. Earle Kindelber 8-Bugle Concert by Charles Duerr

Private, Headquarters Company, 312tl Infantry, 78th Division, Programme: First Call, Black Prince March, Reveille, Bert Lawrence March, Assembly Drop of Water, Chow Call, 1st New lersey Infantry March, Drill, Pay Day, Sick Call, Guard Mounting, Stable, To the Colors. Adjutant's Call. Retreat. Fire, Tattoo, Church Recall. Officers' Call. Call to Quarters, Fatigue, Taps.

9.36-Recital by Lucile Collette, Parisian violin virtuese. The programs will be announced by radio. M Peterson will be the accompaniat.

> K D K A (Pittsburgh) "340 Metres.

1.30 P. M.-Results of morning games 1.30 P. M.—Results of morning games in National and American Leagues.

2 P. M.—Memorial Day Address.

3 P. M.—Concert by Mills's Maryland Seven Orchestra of Cumberland, Md.: Overture, patriotic, "By the Sapphire Sea." "Rygones." "Tee-Pee Blues." Tell Her at Twilight" and "Doo-Dah

3.15 P. M.-Baseball scores, 7 P. M.—Baseball scores; News; Weekly Talk on Dress. 8 P. M.—Baseball scores; "Flanders Field" and "The Freamble of the Con-stitution," by Robert Russell McWhin-ney; "In Memory of Those All of Whom

ney; 'In Memory of Those All of Whom Gave Much and Some of Whom Gave All," by C. C. C. Stotler.

8.30 P. M.—'The Stone Idon' and "The Burning of the Rice Fields," bedtime stories for the children.

9 P. M.—Music.

10 P. M.—Baseball scores.

10.55 P. M.—Arlington time signals. DIES SEVERAL HOURS AFTER AUTO HIT HIM

Elliett Boudy, five years old of 661 West 174th Street, died at 6 A. M. to-day from injuries received from an automobile yesterday afternoon when crossing the street in front of his home. He was carried to Columbus Hospital by Henry Goedeck of No. 318 East 24th Street, whose automobile had hit him, and after being treated for shock and bruises was taken home. He auddenly became worse early to-day and a physician was called, but the boy was dead when he arrived.

COP STOPS HORSE RUSHING IN CROWD

Policeman McGivney Jumps on Runaway's Back From Taxi. Policeman Thomas McGivney was

capture last evening of a runawa;

forme to whose back he leaped from commandeered taxi, after the anima ad endangered the lives of hundred of Brooklyn children and pedestrians A motor truck driven by Charle Dandrea, No. 446 West 35th, Street fashed through Fourth Avenue to the Long Island Railroad Station, passing

RATHER SEE DAUGHTERS DEAD THAN DANCING

ing Community Dance Hall. (Special to The Evening World.) NEW BRITAIN, Conn., May 30 .- De-

claring before a public audience he would rather see his own five daughters dead at his feet than to see them on dance hall floor practising the modern lances, the Rev. A. B. Taylor, pastor of the People's Church of Christ, Unfenominational, to-day took the public forum in opposition to a public danc

The Common Council has before it a resolution calling for the construction of a municipal open air dance pavilion in the park and it is in opposition to this that the clergyman made his speech, claiming that modern dances demoralize he younger generation.

PRINCETON COMMENCEMENT TO BE HELD OUTDOORS.

The annual commencement June 20 o Princeton University, the 175th, will be held this year out of doors for the first ime. The size of the graduating class -about 500-made it impossible for i to be held in Alexander Hall, as ha been the custom for many years.



An Extraordinary Sale! As we are RETIRING FROM BUSINESS, we must dispose of every garment in our factory

warehouse regardless of former prices. Therefore this great sale just in time for June events. Our Entire Stock of

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This is a wonderful opportunity to buy evening clothes at the lowest prices ever quoted for merchandise of this grade. Included are many suits of the well-known "Hickey-Freeman" make.

Samuel Blum

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IRISH COUNTESS SEES MAYOR. buntess Marklevicz, one of the ongest advocates for an Irish Repubmid Mayor John F. Hylan an hour's alt at City Hall yesterday afternoon fore leaving for Dublin to-day by the

Why 275.000 people ongratulated to-day for his daring went to Carlsbad last vear-ARLSBAD SPRUDEL SALTS Take no substitute. arlsbad SALTS Sole Agents for the U. S. A. TO W. 42d St., N. Y. Soil



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AMUSEMENTS.

FPROCTOR'S OPPORTUNITY WEEK BY&28MSt BUSTER KEATON in "The Boat," Jack Holt & Bebe Danleis in "North of the Rio
Grande," and
SUPREME VAUDEVILLE.
Worth of the Rio
Grande," and
BUSTER KEATON in "The
BEAT WAYE
BUSTER KEATON in "The
Buster KEATON in "The ISSUE STATE AND STATE AND

CAMEO IND BIG WEEK!
Glenn HUNTER In "The Cadle Buste"
Connedy, Rolotst. BS.MOSS' B.F. KEITH GAPTOL 'YEllow Men and Gold Gold Art 4157 Trap"

C. MARIE D. Richard Portland

STRAND Richard Barthelmess in "Sonny"

BY A 67 St. Strand Symphony Orch.

STATE

Biggins.

AMUSEMENTS.

WINTER GARDEN MIN TO MAY THURS & HALL EDDIE CANTOR 💀 MAKE IT SNAPP WITH NAN HALPERIN.

CENTURY Then., 62d & Cent. Park West Evs. 8.20, Mats. To-day & Sat. 2. The ROSE of STAMBOUL Evs. (Except Sat. & Holidays), 50c to \$2.5 44TH ST. Then., W. of By. Evs. 8.30 ECIL LEAN and CLEO MAYFIELD THE BLUSHING BRIDE

ASTOR Thea., 45th and B way, Evs. 8.30. BRONX EXPRESS

BLOSSOM TIME

PLAYHOUSE West 48th St. Eves. 8.30 'Up The Ladder' RENYON

FANNY HA'VTHORN By Stanley ORCH, SEATS ALL PERFORMANCES \$2 BARNEY BERNARD and ALEXANDER CARR in a new cornedy, "PARTNERS AGAIN."
ByMontagneGlass&Jules Eckert Goodman

THE CROWDS ARE REPUBLIC Thes. 42d St., W.of B y.Evs. 8.30

THE DEMI-VIRGIN"

Mary Carr

Silver Wings

GAIETY B'way & 46th St. Eves. at 8.30 HOLIDAY MATINEE TO-DAY 2.36. THE DRUMS OF JEOPARDY EARL CARROLL THEA... 7th Av., 50th 8t. Mats. To-day, Thurs. Sat. OPENING POSTFONED TILL FRI. JUNE 2 "Heads I Win" Asw Comedy.

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SE COHAN MAYE TO BAY A SE HUDSON, West 44th St. 4TH MONTH

The RUBICON BURDUNI BOLL

CORT West 48th St. Evenings at 8.20. WALLACE EDDINGER - MARY NASH "CAPTAIN APPLEJACK" GOOD MORNING DEARIE GLOBE B'way & 46th St. Even. at 8.2 HOLIDAY MATS. TO-DAY and SAT. 2.20. HOLIDAY MAT. TO-DAY. (No Wed. Mat MUSIC BOX W.45 St. Bry. 1470. Ev. S. 15 shar BERLIN'S 'MUSIC BOX REVUE SAM H. HARRIS W. 42d St. Eves. 8.1 SIX CYLINDER LOVE

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Mats. Thurs. & Sat. 2.45

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ture industry. TO-MORROW: Read the N. Y. World Review. Presented by WILLIAM FOX Directed by J.GORDON FDWARDS LYRIC W.42 ... SI NOW

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Bats. 2.50, 10.30 A. M.; 1, 2, 5.50 P. M.
ms. and Decaration Day (May 30), 2.30, 30
M. M. 1, 2, 3.0, 8, 20 P. M. SPECIAL MOONLIGHT SAIL

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TO-NIGHT, MAY 30 Leaving Battery
MUSIC DANCING REFFRESHMENTS

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